N° 18,524 A.D. 1909

Date of Application, 11th Aug., 1909
Complete Specification Left, 1st Feb., 1910—Accepted, 11th Aug., 1910

PROVISIONAL SPECIFICATION.

Improvements in Transmitting Apparatus for Wireless Telegraphy.

We, Guglielmo Marconi, LL.D., D.Sc., and Marconi's Wireless Telegraph Company, Limited, both of Watergate House, Adelphi, London, W.C., do hereby declare the nature of this invention to be as follows:—

It has before been proposed (for example in the Specification No. 20,119 of 1907) to employ a transmitter in which the gap between two terminals of the oscillation circuit is more or less bridged at regular intervals by means of bridging pieces in very rapid movement, these bridging pieces preferably consisting of studs fixed to a rapidly revolving disc.

Now it is found that it is very advantageous to obtain a greater number of discharges per second, and this can be done by increasing the number of pairs of studs on the disc and the speed of rotation of the disc. A difficulty however arises, for as stated in that specification at the occurrence of each discharge the condenser is cut out of circuit, and when the discharge stops it is inserted again and is charged by the generator with oscillations, the time period of which is approximately equal to $2\pi\sqrt{C L}$ where C is the capacity of the condenser in farads, and L is the whole inductance in henrys, such inductance L including that of the alternator or transformer if an alternating current generator be employed or of the dynamo armature if a continuous current generator be employed. Now if the time period is reduced to the very small fraction of a second which is now found to be desirable, the value of L becomes less than that of any known dynamo. According to this invention therefore the dynamo is replaced by a battery of low resistance having a sufficiently large number of cells connected in series to give the necessary E.M.F. In circuit with the battery is placed an inductance of suitable value to satisfy the above stated conditions. Preferably a secondary battery is employed which is kept constantly charged by a continuous current dynamo.

Dated this 11th day of August, 1909.

CARPMAEL & Co.,
Agents for Applicants,
24, Southampton Buildings, London, W.C.

COMPLETE SPECIFICATION.

Improvements in Transmitting Apparatus for Wireless Telegraphy.

We, Guglielmo Marconi, LL.D., D.Sc., and Marconi's Wireless Telegraph Company, Limited, both of Watergate House, Adelphi, London, W.C., do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

It has before been proposed (for example in the Specification No. 20,119 of 1907) to employ a transmitter in which the gap between two terminals of the oscillation circuit is more or less bridged at regular intervals by means of

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bridging pieces in very rapid movement, these bridging pieces preferably consisting of studs fixed to a rapidly revolving disc.

Now it is found that it is very advantageous to obtain a greater number of discharges per second, and this can be done by increasing the number of pairs of studs on the disc and the speed of rotation of the disc. A difficulty however arises, for as stated in that specification at the occurrence of each discharge the condenser is shunted and when the discharge stops the shunt is broken and the condenser is charged by the generator preferably in one half oscillation, the time period of which is dependent upon the whole inductance and resistance of the circuit including that of the alternator or transformer if an alternating current generator be employed or of the dynamo armature if a continuous current generator be employed. But to reduce this time period to the very small fraction of a second which is now found to be desirable it is necessary such inductance should be less than that of any known dynamo. According to this invention therefore and in order to reduce the inductance of the charging circuit the dynamo is replaced by a battery of low resistance having a sufficiently large number of cells connected in series to give the necessary E.M.F. In circuit with the battery is placed an inductance of suitable value to satisfy the above stated conditions. Preferably a secondary battery is employed which is kept constantly charged by a continuous current dynamo.

The diagram shows such a transmitter, *a* being the battery connected through a sending key *b* and inductances *c* to a condenser *d* which is connected to slowly rotating discs *e* one of the connections including the primary of the inductive coupling *f* to the aerial *g*. *h* is a disc which can be very rapidly rotated so that the studs *g* upon it bridge at very short intervals the gap between the discs *e*.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

Transmitting apparatus for wireless telegraphy substantially as described.

Dated this 29th day of January, 1910.

G. MARCONI.
MARCONI'S WIRELESS TELEGRAPH COMPANY, LIMITED.
G. Marconi,
Henry S. Saunders,
Directors,
Henry W. Allen,
Secretary.

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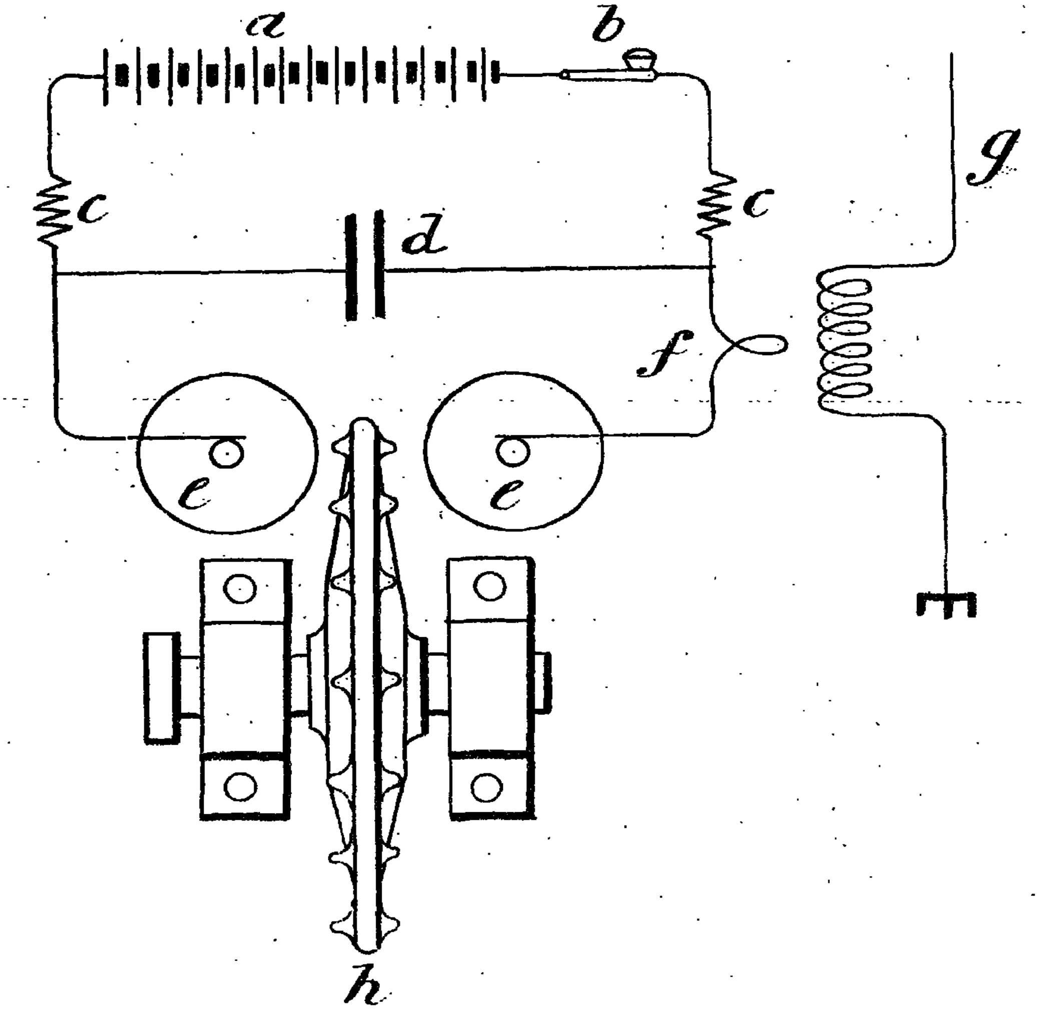
MARCONI & others' Complete Specification.

(1 SHEET)

[This Drawing is a full-size reproduction of the Original.]



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